

**WHAT IS CLAIMED IS:**

1. An apparatus for adjusting a filter tap length for an adaptive equalizer comprising:

a multipath detector for detecting multipath information from a difference between the correlation values of input data applied to the adaptive  
5 equalizer and a training sequence, and from an auto correlation value of a training sequence when the training sequence is valid; and

a tap length adjusting unit for generating a tap length control signal based on positions of the farthest pre-/post-ghosts by using the detected multipath information and a field sync signal.

2. The apparatus according to claim 1, wherein the multipath detector comprises:

a first multiplexer for enabling the input data applied to the adaptive equalizer when the field sync signal is logic "high" and outputting enabled  
5 data;

a second multiplexer for enabling a reference signal when the field sync signal is logic "high" and outputting an enabled signal;

a first sync sequence correlator for calculating a correlation value of the data output from the first multiplexer and a 704-symbol training sequence;

10           a second sync sequence correlator for calculating a correlation value of  
the reference signal output from the second multiplexer and the 704-symbol  
training sequence; and

          a subtractor for subtracting the output signal of the second sync  
sequence correlator from the output signal of the first sync sequence correlator  
15   to detect multipath information.

3.       The apparatus according to claim 2, wherein the tap length  
adjusting unit comprises:

          a calculator for obtaining an absolute value of the output of the  
subtractor which is used as the multipath information obtained from the  
5   multipath detector;

          a threshold comparator for comparing the obtained absolute value with  
a threshold value and outputting only the correlation values exceeding the  
threshold value;

          a counter for counting field sync sections delayed by an amount of  
10   time taken in obtaining the correlation value;

          a ghost detector for detecting a position of a ghost from the correlation  
value obtained by the threshold comparator for the delayed field sync sections  
counted by the counter; and

          a tap length table for matching the tap length so as to cover the  
15   detected pre-/post-ghosts to output the tap length control signal.

4. The apparatus according to claim 3, wherein the tap length table is classified into sections according to a distance from a main tap, and a predetermined number of taps is set to each section.

5. A method for adjusting the filter tap length for an adaptive equalizer comprising the steps of:

detecting multipath information from correlation values of input data applied to the adaptive equalizer and a reference signal, and from an auto correlation value of a training sequence; and

determining a required filter tap length by using the detected multipath information.

6. The method according to claim 5, wherein the multipath detecting step comprises the sub-steps of:

(a) inputting data;

(b) obtaining a correlation value between the data input in step (a) and a reference signal consisting of 704 known symbols;

(c) obtaining a difference between the correlation value obtained in step (b) and the auto correlation value of the reference signal; and

(d) detecting multipath information from the difference obtained in the step (c).

7. The method according to claim 5, wherein the tap length determining step comprises the sub-steps of:

- (a) detecting positions of pre-/post-ghosts farthest from a main tap using the multipath information obtained in the multipath detecting step; and
- 5        (b) adjusting the tap length so as to cover the positions of ghosts detected in step (a).